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GEOTECHNICAL AND GEOENVIRONMENTAL
PROPOSALS

for

ASIAN COMMUNITY DEVELOPMENT
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Geotechnical Engineers

McPHAIL ASSOCIATES, INC.
GEOTECHNICAL AND GEOENVIRONMENTAL
PROPOSALS

for

ASIAN COMMUNITY DEVELOPMENT
CORPORATION
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Ms. Regina Lee
Executive Director

AUGUST 31, 1989



Geotechnical Engineers

August 31, 1989

Asian Community Development Corporation
360-B Tremont Street
Boston, MA 02116

Attention: Ms. Regina Lee, Executive Director

Reference: BRA Parcels A, B and C in Chinatown; Boston, Massachusetts
Proposal for Geotechnical Engineering Services

Dear Ms. Lee:

In response to the recent request for proposal from Ms. Regina Lee of the Asian Community Development Corporation, we are pleased to have the opportunity to submit our proposal for performing subsurface investigations and foundation engineering studies for the proposed residential developments of BRA Parcels A and B and for the proposed Community Center on BRA Parcel C in Boston's Chinatown.

The purposes of the subsurface investigations are to define the subsurface conditions as they relate to foundation design, and based on these conditions, to provide engineering recommendations for economical foundation design for the proposed developments with one, two or possibly three below-grade parking levels. During design development, we would work closely with the Architect and Structural Engineer to refine the details of the design for support of the building structures and for economical design of the below-grade parking level(s). We would also attend meetings, provide consultation, and prepare the earthwork and foundation specialty specifications as well as review the final structural drawings as a check that our recommendations for economical design are properly incorporated into the Contract Documents for construction.

The proposed design services are comprehensive and represent all required geotechnical engineering services through completion of construction documents related to design and construction of the building foundations and to the geotechnical aspects of site design based on current State Building Code and City of Boston requirements.

The parcels are being developed by three separate community groups under a tentative developer designation granted by the BRA.

BRA Parcel A, approximately 35,000 square feet, is bounded by Marginal Road, Washington Street, a realigned Pine Street and various properties to the south. This project is being sponsored by the Chinese Economic Development



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Council (CEDC). The architect is Chia-Ming Sze and the contractor is Peabody Construction.

The Parcel A development consists of a mix of low, mid and high rise buildings which will provide 141 units of housing. Along Pine Street and parts of Washington Street, low rise row houses are sited to carry the existing neighborhood scale. Along Marginal Road, 12 and 18-story towers are sited overlooking the Massachusetts Turnpike Extension towards the South End. The buildings will be clustered around an enclosed interior courtyard. Underground parking for up to 240 cars in two or three levels will be provided.

Parcel B is approximately 37,000 square feet of land bounded on the north by Oak Street, on the west by Washington Street, on the east by Maple Place, and on the south by a new pedestrian way separating Parcel B from its adjacent Parcel A.

Based on Woo and Williams' preliminary architectural rendering and on information provided in the request for proposal, it is understood that the proposed residential development of 120 units for Parcel B will consist of an 18-story high-rise tower along Washington Street, an 8-story mid-rise building on Oak Street, and 4-story low-rise structures along Maple Street and the new pedestrian street. Underground parking of one or two levels will be provided beneath an inner courtyard and under the buildings.

Parcel C is a multi-function community center of approximately 100,000 square feet located on an L-shaped tract of about 24,000 square feet between Oak and Nassau Street. This project is being developed by the Parcel C development group, a coalition of social service agencies in Chinatown. At this point, an architect has not been selected for this project.

The sponsors are currently considering a proposal to design and construct one single underground parking facility under parcels A, B and C for up to 500 cars on two levels. Should this proposal prove not to be feasible, the sponsors would consider the following options; 1) one single garage under parcels A and B, and one garage under parcel C; or 2) three separate garages under each parcel as described above.

Based upon our foundation design and construction experience at several nearby sites including Waterford Place and Teradyne, we anticipate the project site to be underlain by miscellaneous fill and a discontinuous organic silt layer to a combined depth of about 15 feet. Next is an extensive deposit of Boston blue clay to a depth of about 100 feet. Below the clay is a thin deposit of glacial till plastered on the surface of the underlying argillite bedrock.



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The groundwater level is anticipated to be perched at a depth of approximately 10 feet on the underlying clay surface.

Considering the preschematic status of the developments and the below-grade garage options being considered, the latter of which has tremendous foundation design impacts, it would be prudent to phase the geotechnical services commensurate with the phasing of the architectural and structural designs for the three parcels. Specifically, we propose a preliminary investigation and engineering study at this time and then during design development when the building configurations, structural systems and structural loads are better defined, we would perform a final investigation and engineering study specifically tailored to the geotechnical requirements which, at the current time, are not sufficiently defined. This phasing of services is the most cost-effective approach for the sponsors.

Phase I geotechnical services, which would coincide with preschematic or schematic design, would be a preliminary or feasibility study with the goal of providing sufficient preliminary soil boring information and foundation engineering evaluation to support planning and preliminary cost estimating. For Phase I of each parcel, we recommend two 30-foot deep soil borings and one groundwater observation well along with the following foundation engineering services:

1. Solicit bids from qualified drilling subcontractors to perform the soil borings and groundwater observation wells. The advantage of independent drilling subcontractors versus in-house drilling being greater availability, better capabilities and economics of competitive bidding;
2. Clear utilities with Dig-Safe;
3. Lay out the soil borings in the field by taping from existing site features and determine the ground surface elevation at each exploration location utilizing survey drawings to be provided to McPhail Associates, Inc.;
4. Provide experienced field personnel to monitor the soil borings and prepare detailed field logs, to monitor groundwater conditions, and to modify the program depending on actual conditions encountered;
5. Review available foundation design, foundation construction, site, subsurface and geological information;



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6. Perform laboratory testing of soil samples;
7. Perform feasibility study foundation engineering analyses;
8. Provide preliminary recommendations for economical foundation design;
9. Prepare a feasibility study foundation engineering report documenting the above.

Phase II geotechnical services for each of the three parcels, which would coincide with design development, would be a final subsurface investigation and foundation engineering study performed only after the number of below-grade parking levels, structural configuration and structural systems are established so as to permit specific tailoring of the borings and final engineering evaluation. We anticipate six, five and four final borings at Parcels A, B and C, respectively. Since three borings would be common to Parcels A and B, there would be a total of nine, nine and six total borings for Parcels A, B and C, respectively. Actual final boring depths would be tailored to the specific requirements of each project when they are sufficiently defined. The engineering services would be as itemized above except oriented towards finalizing foundation design parameters for economical building construction.

Phase III geotechnical services for each development would be design assistance to the Architect and Structural Engineer during working drawings and preparation of the Construction Documents. These services consist of attending meetings, providing consultation, refining the foundation design recommendations, preparing the earthwork and specialty foundation specification sections, and reviewing the geotechnical aspects of the structural and site drawings. The purpose of these services is as a check that the Construction Documents are consistent with our foundation design recommendations and Massachusetts State Building Code requirements.

In response to your request that we submit a firm price for components of our work, the engineering fee for Phases I, II & III services would be \$9,000, \$24,000 and \$9,000, respectively, including our drilling subcontractor for each of Parcels A and B. Hence, the total lump sum fee for full-scope geotechnical engineering services through completion of Construction Documents would be \$42,000 for each of Parcels A and B. For Parcel C, the engineering fee for Phases I, II & III services would be \$9,000, \$21,000 and \$9,000 for a total lump sum fee of \$39,000 for full-scope geotechnical engineering services through completion of Construction Documents.



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In the event of any significant change in scope of services (which could result from a major design change in building program, for example, or subsurface conditions being markedly different from those discussed above), the fee for foundation engineering services would be modified based on a multiple of 2.5 times salary cost for technical personnel directly attributable to the project plus any direct expenses (e.g. drilling subcontractor, report reproduction, etc.) at cost plus 10 percent. The current salary cost ranges for our technical personnel who would participate in this project are as follows:

Principal (Project Manager).....	\$45.00/hr.
Associate (Project Engineer).....	\$36.00/hr.
Senior Engineer.....	\$22.00 - \$30.00/hr.
Field Engineer or Geologist.....	\$16.00 - \$24.00/hr.
Technician/Drafter.....	\$13.00 - \$18.50/hr.

The above lump sum fees are predicated on the complexity of working for three clients with three different design teams who likely will have different schedules. As a practical matter, no cost savings on fees can be realized with simultaneous services on the three parcels (except for a minor driller's mobilization fee of a few hundred dollars) due to the above complexity which effectively creates three separate projects. The real potential for cost savings lies in your selection of a geotechnical firm such as McPhail Associates, Inc. with extensive downtown Boston experience in similar conditions and with a reputation for developing economical foundation designs in the best interest of the Client.

This proposal is valid for a period of 30 days and it is predicated on services being performed on a generally continuous basis in calendar years 1989 and 1990.

The Client agrees to provide right of entry to the site in order that the soil borings can be performed. While the geotechnical engineer will take all reasonable precautions to avoid damage to property, subterranean structures or utilities, the Client agrees to hold the geotechnical engineer harmless for any damage to subterranean structures or utilities not shown on the plans furnished or evident in the field. Our drilling subcontractor carries liability insurance of \$1,000,000 related to damages associated with performance of the borings.



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The geotechnical engineer's liability for damages due to professional negligence will be limited to an amount not to exceed \$1,000,000 in accordance with the terms and conditions of our policy.

Upon receipt of authorization to proceed and upon receipt of survey plans, the field work for the feasibility study can commence within one week. The field work is estimated to require approximately two weeks. The preliminary engineering report would be submitted about three weeks after completion of the field work. Subsequent Phase II and III services would be performed in a timely and professional manner in response to the needs of the Client and design team for each of the three developments.

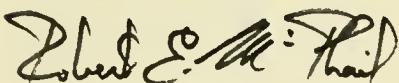
Invoicing for the foundation engineering services would be submitted monthly based on percent completion and payment would be due within 30 days. The Client agrees to pay interest at the rate of one and one-half percent per month from the date of invoicing for monies outstanding in excess of 30 days and collection costs on monies outstanding in excess of 90 days.

To authorize us to proceed with the services proposed above, please sign and return the enclosed copy of this letter. Should you have any questions, we would be pleased to meet with you to discuss the details of our approach to these projects. We appreciate the opportunity to submit this proposal and look forward to being of service to the Asian Community Development Corporation, to the other project sponsors and to their design teams on these challenging projects.

Very truly yours,

McPHAIL ASSOCIATES, INC.

ASIAN COMMUNITY DEVELOPMENT CORPORATION



Robert E. McPhail, P.E.

BY _____

DATE _____

Enclosure

REM/jrm



Geotechnical Engineers

August 31, 1989

Asian Community Development Corporation
360-B Tremont Street
Boston, MA 02116

Attention: Ms. Regina Lee, Executive Director

Reference: BRA Parcels A, B and C in Chinatown; Boston, Massachusetts
Proposal for Environmental Services Pursuant to MGL c.21E & MCP

Dear Ms. Lee:

In response to the recent request for proposal from Ms. Regina Lee of the Asian Community Development Corporation, we are pleased to present our proposal for performing a Preliminary Assessment and Phase I - Limited Site Investigation pursuant to the Massachusetts Oil and Hazardous Materials Release Prevention and Response Act (MGL Chapter 21E) and pursuant to the Massachusetts Contingency Plan (310 CMR 40.00).

McPhail Associates, Inc. is also submitting a separate proposal for geotechnical engineering services for the three proposed developments. The site description and the proposed development for each of the three parcels are as discussed in our proposal for geotechnical engineering services of this same date.

Our proposed scope of services consists of an assessment of the site history relative to the possible presence of oil and hazardous materials, testing of the soil samples from the foundation engineering borings for the presence of volatile organic compounds utilizing an HNU photoionization chamber, and subcontracting to a chemical testing laboratory the analysis of soil and groundwater samples for contamination associated with petroleum (i.e. total petroleum hydrocarbons and volatile organic compounds), for polynuclear aromatic compounds, for pesticides and PCB's, and for heavy metals (i.e. total metals and EP toxicity on the RCRA 8 metals).

The above chemical testing is considered to be a reasonable scope for a previously developed urban site where there has been at least two generations of construction and where it is probable that oil has been utilized for heating of buildings at and in the immediate vicinity of the site. This scope of chemical testing is particularly important given the current difficulties in disposing of low-level oil contaminated soil which almost certainly underlies this filled site given the stringent DEP remediation criteria.



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The above scope is intended to be sufficient for a site classification determination in accordance with Department of Environmental Protection (DEP) standards. Further, in the event of a non-priority disposal site classification pursuant to 310 CMR 40.544, then our report should be sufficient documentation for subsequent preparation of a submission of an application for waiver of approvals. Granting of the waiver by the DEP greatly expedites any subsequently required remedial response actions.

In response to your request that we submit a firm price for our work, the environmental engineering fee for each parcel would be a lump sum of \$14,000 including an allowance of \$5,000 for chemical testing. If the environmental services were to be performed simultaneously for all three sites, then the total fee per site would be only \$11,000. This proposal is valid for a period of 30 days and is predicated on performance of the geotechnical engineering services by McPhail Associates, Inc. since the geotechnical borings would be the basis of our soil and groundwater samples for purposes of chemical testing.

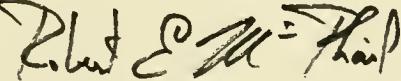
The geotechnical engineer's liability for damages due to professional negligence associated with this environmental site assessment will be limited to an amount not to exceed \$50,000.

Invoices for services would be submitted monthly and payment would be due within 30 days. The Client agrees to pay interest at the rate of 1.5 percent per month on monies outstanding in excess of 30 days and collection costs on monies outstanding in excess of 90 days. To authorize us to proceed with the services proposed above, please sign and return the enclosed copy of this letter. We are prepared to commence within one week subject to being provided with survey plans and complete the above scope of environmental site assessment within six to eight weeks after authorization.

We appreciate being invited to submit this proposal and look forward to the opportunity of being of service to the Asian Community Development Corporation and to the other project sponsors.

Very truly yours,

McPHAIL ASSOCIATES, INC.

A handwritten signature in black ink that reads "Robert E. McPhail". The signature is fluid and cursive, with "Robert" and "E." appearing at the top, "McPhail" in the middle, and a small flourish at the end.

Robert E. McPhail, P.E.

ASIAN COMMUNITY DEVELOPMENT CORPORATION

BY _____

DATE _____

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